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WATER MAINS UNDER RAILROAD TRACKS[1]

Mr. D. R. GWINN:[2] The Pennsylvania Railroad ran over some six inch pipe laid about forty years ago, and we adopted a plan, whenever we had a leak to dig up, of putting on one of those extra heavy flange sleeves made by J. B. Clow and Son. I think the flange must have been an inch and a quarter thick and a large enough sleeve to cover the bell. That seemed to be the most effective remedy we were able to use. We tried making a little tunnel on a small scale, that is, building a wall on either side and covering it over with reinforced concrete slabs. If it were of any particular length, we would fix the ends of the joints so that one would lap over the other, so the dirt would not sift through, but the best success we had was with this extra heavy sleeve. You have actually, outside of your original joint, the other two joints and you can make them as heavy as you please by pouring them solid with lead if you like.

Mr. J. E. GIBSON:[3] Under railroad tracks, we have adopted the policy of laying another pipe just about the length of a cross tie, and then passing the water pipe through that and making all joints between tracks, so that if we do have a leak we can get down, as a rule, without undermining the track. If there is a breakage in the pipe passing through the outer conduits, which we have never had occasion to experience, we may substitute a new pipe without undermining the track again. This is a little more difficult but it can be done. The outside pipe simply takes the vibration off the water main, and we have found that to be very effective.

Mr. W. LUSCOMBE:[4] We have gotten rid of a great deal of trouble with water pipes under crossings by putting the pipe under the railroad deeper than ordinarily. By placing them eight and a half to nine feet deep, we found the vibration much less and our first leak

[1] Discussion at the Philadelphia Convention, May 18, 1922.

[2] President, Water Company, Terre Haute, Indiana.

[3] Superintendent, Water Department, Charleston, S. C.

[4] Vice-President, Gary Heat, Light and Water Company, Gary, Indiana.

is yet to occur. Of course the city is rather new, but after fifteen years we have not yet had one leak under railroads. We adopt also the plan of having the joints come between the tracks so as to make them more accessible for repairs.

Mr. W. C. **Hawley**:[5] Twenty or twenty-five years ago an old eight inch cast iron main passed under the railroad and we had to dig down frequently to those joints and recaulk them. That was before the days of leadite. We have replaced the lead with leadite and have had no trouble since. The heavy Reading trains come in and, as they go over the thoroughfare, they put on their brakes, so that is a pretty good test of that joint.

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[5] Chief Engineer and General Superintendent, Pennsylvania Water Company, Wilkinsburg, Pa.